

REMARKS

The Office Action dated July 13, 2005, has been received and carefully noted. The following remarks are submitted as a full and complete response thereto. Claims 1-6 are pending and respectfully submitted for consideration.

Claims 1-6 were rejected under 35 U.S.C. § 102(b) as being anticipated by Iwasaki (U.S. Patent No. 6,124,829). Claims 2-5 depend from claim 1. The Applicants traverse the rejection and respectfully submit that claims 1-6 recite subject matter that is neither disclosed nor suggested by Iwasaki.

Claim 1 recites an on-board antenna comprising a radiation element provided on a dielectric substrate. A grounding conductor is provided on the dielectric substrate and surrounding a periphery of an outer edge portion of the radiation element at a position spaced away outwardly from the outer edge portion. A conductive member is provided on the dielectric substrate at a position spaced away outwardly from an outer edge portion of the grounding conductor. The radiation element, the grounding conductor, and the conductive member are provided on the same surface of the dielectric substrate.

Claims 6 recites an on-board antenna comprising a radiation element provided on a dielectric substrate. A grounding conductor is provided on the dielectric substrate and surrounding a periphery of an outer edge portion of the radiation element at a position spaced away outwardly from the outer edge portion. A pair of conductive members is provided on the dielectric substrate at a position spaced away outwardly from an outer edge portion of the grounding conductor so as to oppose each other. The

radiation element, the grounding conductor, and the pair of conductive member are provided on the same surface of the dielectric substrate.

In the present invention, as claimed in claim 1, in an on-board antenna, a radiation element and a grounding conductor provided in a position spaced away outwardly from an outer edge portion of the radiation element are provided on the same surface of a dielectric substrate. The conductive member provided is on the dielectric substrate at a position spaced away and outwardly from an outer edge portion of the grounding conductor.

As a result of the claimed invention, when the antenna receives a transmission, a radio wave transmission on the dielectric substrate can be interrupted on the conductive member. Further, when receiving a transmission, a receiving property, especially a sensitivity property according to elevation angles can be greatly improved. See page 10, lines 5-12 of the specification of the present application. In contrast, in Iwasaki, a radiation element 53 is disposed between a circular patch 54 and a ground conductor 58, and the circle-annular patch 53 is disposed inside of the ground conductor 58. Accordingly, based on the structure of Iwasaki, the radio wave transmission on the dielectric substrate cannot be interrupted. The Applicants respectfully submit that Iwasaki fails to disclose or suggest the claimed features of the invention, and thereby fails to provide the critical and non-obvious advantages provided by the present invention.

Iwasaki discloses a circularly polarized wave patch antenna with a wide shortcircuit portion. In FIGS. 17 and 18, reference numerals 51 and 52 are dielectric substrate members with thicknesses h'_1 and h'_2 , respectively. See column 8, lines 5-7

of Iwasaki. Reference numeral 53 is a circle-annular patch composed of a conductive plate and having an outer diameter of a'_o and an inner diameter of a'_i . Reference numeral 54 is a circular patch layered on the circle-annular patch 53. Reference numeral 58 is a ground conductor. Reference numerals 55a to 55d are shortcircuit portions that shortcircuit the circle-annular patch 53 and the ground conductor 58. Each of the shortcircuit portions 55a to 55d is composed of a conductor with a width W . Reference numerals 56a and 56b are coaxial lines that feed signals to the circle-annular patch antenna 53. Reference numerals 57a and 57b are coaxial lines that feed signals to the circular patch antenna 54. See column 8, lines 5-21. Iwasaki further discloses an annular patch formed on a first surface of the dielectric substrate and a ground conductor formed on a second surface of the dielectric substrate. See column 2, lines 55-58 of Iwasaki.

With respect to claims 1 and 6, the Applicants respectfully submit that Iwasaki fails to disclose or suggest the claimed features of the invention. Claim 1 recites a conductive member provided on the dielectric substrate at a position spaced away outwardly from an outer edge portion of the grounding conductor. Claim 6 recites a pair of conductive members provided on the dielectric substrate at a position spaced away outwardly from an outer edge portion of the grounding conductor so as to oppose each other.

The Office Action took the position that the circle-annular patch 53 of Iwasaki was comparable to the conductive member recited in claim 1, and the pair of conductive members recited in claim 6. See page 2, lines 10-20 of the Office Action. However, there is no disclosure or suggestion in Iwasaki that the circle-annular patch 53 is

provided on the dielectric substrate members 51, 52 at a position spaced away outwardly from an outer edge portion of the ground conductor 58. See Fig. 18 of Iwasaki. In contrast, Iwasaki shows in Fig. 18 that the circle-annular patches 53 is provided on dielectric substrate member 51 at a position inwardly from the outer edge of the ground conductor 58. As such, Iwasaki fails to disclose or suggest at least the features of a conductive member or pair of conductive members provided on the dielectric substrate at a position spaced away outwardly from an outer edge portion of the grounding conductor, as recited in claims 1 and 6.

Claims 1 further recites that the radiation element, the grounding conductor, and the conductive member are provided on the same surface of the dielectric substrate. Claim 6 further recites that the radiation element, the grounding conductor, and the pair of conductive members are provided on the same surface of the dielectric substrate. In contrast, Iwasaki discloses that an annular patch is formed on a first surface of the dielectric substrate, and a ground conductor is formed on a second surface of the dielectric substrate. See column 2, lines 55-58 of Iwasaki. See also Fig. 18 of Iwasaki which shows the circle-annular patch 53 on a surface between dielectric substrate members 51 and 52, while the ground conductor 58 is shown on a different surface of the dielectric substrate member 51 from the circle-annular patch 53,. The Applicants respectfully submit that Iwasaki fails to disclose or suggest at least the feature of the radiation element, the grounding conductor, and conductive member of the pair of conductive members being provided on the same surface of the dielectric substrate, as recited in claims 1 and 6.

According to U.S. patent practice, a reference must teach every element of a claim in order to properly anticipate the claim under 35 U.S.C. §102. In addition, “[a] claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” Verdegaal Bros. v. Union Oil Co. of California, 814 F.2d 628,631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). “Every element of the claimed invention must be arranged as in the claim [t]he identical invention must be shown in as complete detail as is contained in the patent claim.” Richardson v. Suzuki Motor Co., 868 F.2d 1226, 1236 (Fed. Cir. 1989) (emphasis added). The Applicants respectfully submit that Iwasaki does not disclose or suggest the combination of claimed features as discussed above. Accordingly, Iwasaki does not anticipate claims 1 and 6, nor are claims 1 and 6 obvious in view of Iwasaki. As such, the Applicants submit that claims 1 and 6 are allowable over the cited art.

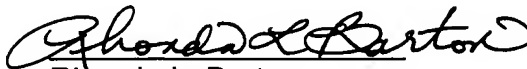
Claims 2-5 depend either directly or indirectly from claim 1. The Applicants respectfully submit that these dependent claims are allowable at least because of their dependency from allowable base claim 1. Accordingly, the Applicants respectfully request allowance of claims 1-6 and the prompt issuance of a Notice of Allowability.

Should the Examiner believe anything further is desirable in order to place this application in better condition for allowance, the Examiner is requested to contact the undersigned at the telephone number listed below.

In the event this paper is not considered to be timely filed, the Applicants respectfully petition for an appropriate extension of time. Any fees for such an extension, together with any additional fees that may be due with respect to this paper,

may be charged to counsel's Deposit Account No. 01-2300, referencing Attorney Dkt.
No. 107355-00100.

Respectfully submitted,



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